DOCUMENT RESUME

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ABSTRACT

The Highland High School (Salt Lake City, Utah) vocational television production program was designed to provide students with marketable skills in color television studio operation. Among the skills covered in the program were camera set-up and operation, video engineering, production switching, directing, television lighting, audio engineering, set design, multiplexer projection, graphics design, and photography basics. Both theory and hands-on experience were stressed, with emphasis placed on production techniques through production for both in-house and commercial programs. (Author/HAB)

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ED125631

Date: Began 1972

Title: Highland High School Vocational Television
A Salt Lake Schools Exemplary Vocational Program

Author: LaMar C. Nagle, Media Coordinator
Highland High School
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Salt Lake City, Utah

Summary of Program: A vocational television production program designed to educate both boys and girls with marketable skills in color television studio operation:

The following skills are covered:

1. Camera set-up and operation
2. Video engineering
3. Production switching
4. Directing
5. Television lighting
6. Audio engineering
7. Set design
8. Multiplexer (film chain) projection
9. Graphics design and vidifont operation
10. Photography basics

Both theory and hands-on experience are stressed with emphasis placed on production techniques through production for both "in house" and commercial programs. The studio - with a paid student crew - is rented for commercial purposes and an on-the-job training aspect is infused into the program in this manner.

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IR 003 719

HIGHLAND HIGH SCHOOL TELEVISION TRAINING COURSE

A SALT LAKE CITY SCHOOLS EXEMPLARY VOCATIONAL PROGRAM

PURPOSE: This course is a three year training program designed to give the student a complete understanding of television production theory and practice. The student will gain a working knowledge of techniques employed in both commercial and closed-circuit operations. He will, as a result of this training, be readied with a marketable skill and with the knowledge needed for basic FCC licensing. He will be readied for employment in commercial or public broadcasting, in closed circuit operation for industrial and educational systems, or in cable station operation.

FACILITIES FOR TRAINING: Highland High School has a full-color production studio patterned after commercial studios, a separate control booth, a sound stage and a taping and dubbing room. The studio has curved and coved cyc walls, a curtain system, a light grid with 16 feet of head room and a dimmer panel that controls the all quartz lighting instruments.

The television production board equipment includes three color floor cameras and one color film-chain camera all with remote camera control units. There are two one inch video tape recorders with complete editing capabilities; an engineering section; an audio mixing panel with a 4 microphone input, a turntable and cassette deck; a character generator; and remote busses to a time-base corrector and additional editing equipment as well as a 5 channel closed-circuit distribution system that serves every classroom in the school. This is controlled through the production

FACILITIES FOR TRAINING (continued) switcher that has a chroma-key unit, a very sophisticated special effects generator and 9 monitors.

PERSONNEL: The heart of the vocational television program is centered in the staff that includes: LaMar Nagle, the originator of the program and the coordinator of the Highland High Media Center; a television teacher, hired from the industry; a photography teacher; an engineering consultant, the retired chief engineer at KSL-TV.

COURSE TEXTS: Williams, Richard, Television Production, 1974

Zettl, Herbert, Television Production Workbook

Millerson, G., The Techniques of Television Production

OBJECTIVES FOR STUDENTS:

1. The student will be able to make a judgment of television as an occupation and of its possibilities for his employment.
2. The student will be able to demonstrate a basic knowledge of theory of operation of the various component parts of television equipment, i.e., the camera, the tape recorder, the film chain and multiplexer, the electronic editor, the special effects generator, the sound mixer, and microphones, the chroma-key unit, and the character generator.
3. The student will be able to demonstrate competency level achievements in various production techniques and skills, i.e., camera operation, set lighting, sound recording, show directing, graphics production and use, set designing and construction, manipulation of various kinds of special effects equipment, set construction, and tape editing.

OBJECTIVES FOR STUDENTS continued:

4. The student will be able to demonstrate a "hands on" proficiency in television program productions including all phases from script writing to completed program. These programs will vary from 30 second spot advertisements to 30 minute feature programs.
5. The student will be able to relate his television studies in relationship with his other academic pursuits in high school, and to see the necessity of a broad background of preparation in order to predict success in the television field.
6. The student will be able to produce multi media instructional programs that incorporate S-8 or 16mm film, slides, sound, and special effects, using the television as the final format of presentation.
7. The student will be able to participate in a work-study program during his senior year. There will be an on-the-job training phase of participation in conjunction with the local commercial television stations and/or other commercial applications of television.

INSTRUCTION METHOD:

Teaching Organization Plan: The general instruction approach is to proceed from a closely structured lecture-demonstration method in the first year to an equally un-structured, individualized method in the second year; and finally to a work study program correlated with the local commercial and public television stations in the third year program.

INSTRUCTION METHOD:

Class Size: Each class has 16 members - male and female. The numbers are dictated by the number of work stations (8) and an instruction plan that calls for concurrent instruction in photography and in off-the-air taping, dubbing and editing techniques. On a rotating 2 week schedule, half the class is instructed in the TV studio and the other half - in two groups - are instructed in photography and/or taping and dubbing.

Instruction Period: A two period block of time (90 minutes) is utilized during the regular school day. Presently (1974-75) there are three classes being instructed.

Class times: 8:00 - 9:50 A.M.
9:55 -11:30 A.M.
1:00 - 2:35 P.M.

EVALUATION METHODS:

Evaluation Methods: (1) Written test based on text materials as well as on lectures by the teachers and guest consultants -- specialists from commercial and public television.

(2) Proficiency demonstrations by students as they work with the various pieces of equipment. This will be further explained under the unit plans and the five competency levels of advancement.

OPEN ENROLLMENT:

The Salt Lake School District has an open enrollment policy in regards to the four exemplary vocational programs -- one in each high school. A student from any of the four high schools can enroll in the vocational program of any other high school. Highland's vocational television currently (1974-75) has students enrolled from all four high schools.

YEARLY TEACHING OBJECTIVES

A Three Year Comprehensive Teaching Program and Work Experience

First Year Program

Note: The introductory year in vocational television is concerned with a primary technical training, with a rudimentary knowledge of production techniques and with a working trade vocabulary.

Training objectives:

A working hands-on use of black and white production equipment including:

A. Camera
B. Switcher-special effects generator
C. Audio mixer, microphones, tape deck, record player
D. Picture composition
E. Basic TV graphics
F. 35 min. photography for television*
G. Television lighting
H. Basic video tape recording
I. Use of S-8 and 16mm motion* pictures

*It is recommended that first-year television students enroll in the basic photography class at Highland High.

Second Year Program

Note: The second-year program is concerned with an advanced technical training, with the introduction of program design and with program production.

Training Objectives:

1. A working hands-on knowledge of:
   A. Color cameras-lens operation
   B. Color monitors
   C. Color encoders
   D. Lighting for color
   E. Advancing effects generators
   F. Advanced switchers
   G. Multiplexers - film chain units
   H. Character generators
   I. Advanced TV graphics
   J. Chroma-key unit
   K. Video tape electronic editing and dubbing
   L. Closed circuit television distribution
   M. TV equipment patching and switching
   N. Audio tape production-record, edit, sound, on sound, sound with sound, and dubbing
   O. Advanced use of 35 min. slides and 16 min. movie cameras*

Second Year Program - continued:

2. Introduction of program design concepts

*Advanced photography courses are recommended for second-year vocational television students

Note: A successful completion of first year vocational television in a pre-requisite for this second year program. Continual evaluation of attitude and television ability is an adjunct of each succeeding semester of work in this field.

Third Year Program:

Note: The third year of study in the vocational television program is oriented to inter-related phases:

1. The continuing sophistication of technical skills;
2. The understanding of the psychology of production concepts and design;
3. The practical application of learned skills in a work-study program.

Training Objectives:

1. Television production job deliniation and practice including:

A. Prop man
B. Camerman
C. Floor Director
D. Audio Engineer
E. Video Engineer
F. Film Editor
G. Director
H. Producer
I. Program Director
J. Air Operations Manager
K. Production Manager

2. Techincal Skills:

A. Multi-media applications
B. Advanced audio
C. Programmer use
D. Studio equipment lay-out design
E. Advanced lighting

3. Production Skills

A. Design and production of commercials
B. Production of dramatic events
C. Sports productions
D. Documentary productions

Note: It is recommended that the third year studies be limited to those students most oriented to television as a vocation. They should be highly motivated and skilled in both technique and attitude as indicated by the previous two years of study.

The third year program, and to a lesser extent the second year program, is directly aimed at facilitating the transition from vocational television to employment in an industry which needs this kind of background - this can be in a commercial TV station, a cable TV station, or in schools, hospitals, public institutions or businesses using closed circuit television systems.

HIGHLAND HIGH SCHOOL TELEVISION TRAINING COURSE
A SALT LAKE CITY SCHOOLS EXEMPLARY VOCATIONAL PROGRAM

PURPOSE: This course is a three year training program designed to give the student a complete understanding of television production theory and practice. The student will gain a working knowledge of techniques employed in both commercial and closed-circuit operations. He will, as a result of this training, be readied with a marketable skill and with the knowledge needed for basic FCC licensing. He will be readied for employment in commercial or public broadcasting, in closed circuit operation for industrial and educational systems, or in cable station operation.

FACILITIES FOR TRAINING: Highland High School has a full-color production studio patterned after commercial studios, a separate control booth, a sound stage and a taping and dubbing room. The studio has curved and coved cyc walls, a curtain system, a light grid with 16 feet of head room and a dimmer panel that controls the all quartz lighting instruments.

The television production board equipment includes three color floor cameras and one color film-chain camera all with remote camera control units. There are two one inch video tape recorders with complete editing capabilities; an engineering section; an audio mixing panel with a 4 microphone input, a turntable and cassette deck; a character generator; and remote busses to a time-base corrector and additional editing equipment as well as a 5 channel closed-circuit distribution system that serves every classroom in the school. This is controlled through the production switcher that has a chroma-key unit, a very sophisticated special effects generator and 9 monitors.

PERSONNEL: The heart of the vocational television program is centered in the staff that includes: the television teacher, a former director and producer, a photography technician, an engineering consultant, a retired chief

PERSONNEL: engineer at KSL-TV, and the coordinator of the Highland High Media center.

COURSE TEXTS:
Williams, Richard, Television Production, 1974
Zettl, Herbet, Television Production Workbook
Millerson, G, The Techniques of Television Production

OBJECTIVES FOR STUDENTS:

1. The student will be able to make a judgment of television as an occupation and of its possibilities for his employment.
2. The student will be able to demonstrate a basic knowledge of theory of operation of the various component parts of television equipment, i.e., the camera, the tape recorder, the film chain and multiplexer, the electronic editor, the special effects generator, the sound mixer, and microphones, the chroma-key unit, and the character generator.
3. The student will be able to demonstrate competency level achievements in various production techniques and skills, i.e. camera operation, set lighting, sound recording, show directing, graphics production and use, set designing and construction, manipulation of various kinds of special effects equipment, set construction, and tape editing.
4. The student will be able to demonstrate a "hands on" proficiency in television program productions including all phases from script writing to completed program. These programs will vary from 30 second spot advertisements to 30 minute feature programs.
5. The student will be able to relate his television studies in relationship with his other academic pursuits in high schools, and to see the necessity of a broad background of preparation in order to predict success in the television field.
6. The student will be able to produce multi media instructional programs that incorporate S-8 or 16mm film, slides, sound and

OBJECTIVES FOR STUDENTS

special effects, using the television as the final format of presentation.

7. The student will be able to participate in a work-study program during his senior year. There will be an on-the-job training phase of participation in conjunction with the local commercial television stations and/or other commercial applications of television.

INSTRUCTION METHOD:

Teaching Organization Plan: The general instruction approach is to proceed from a closely structured lecture-demonstration method in the first year to an equally un-structured, individualized method in the second year with a work-study program correlated with the local commercial and public television stations.

Class Size: Each class has 16 members - male and female. The numbers are dictated by the number of work stations (8) and an instruction plan that calls for concurrent instruction in photography and in off-the-air taping, dubbing and editing techniques. On a rotating 2 week schedule, half the class is instructed in the TV studio and the other half - in two groups are instructed in photography and/or taping and dubbing.

Instruction Period: A two period block of time (90 minutes) is utilized during the regular school day. Presently (1975-76) there are three classes being instructed.

Class times: 8:00-9.50 A.M.
9:55-11:30 A.M.
1:00- 2:35 P.M.

EVALUATION METHODS:

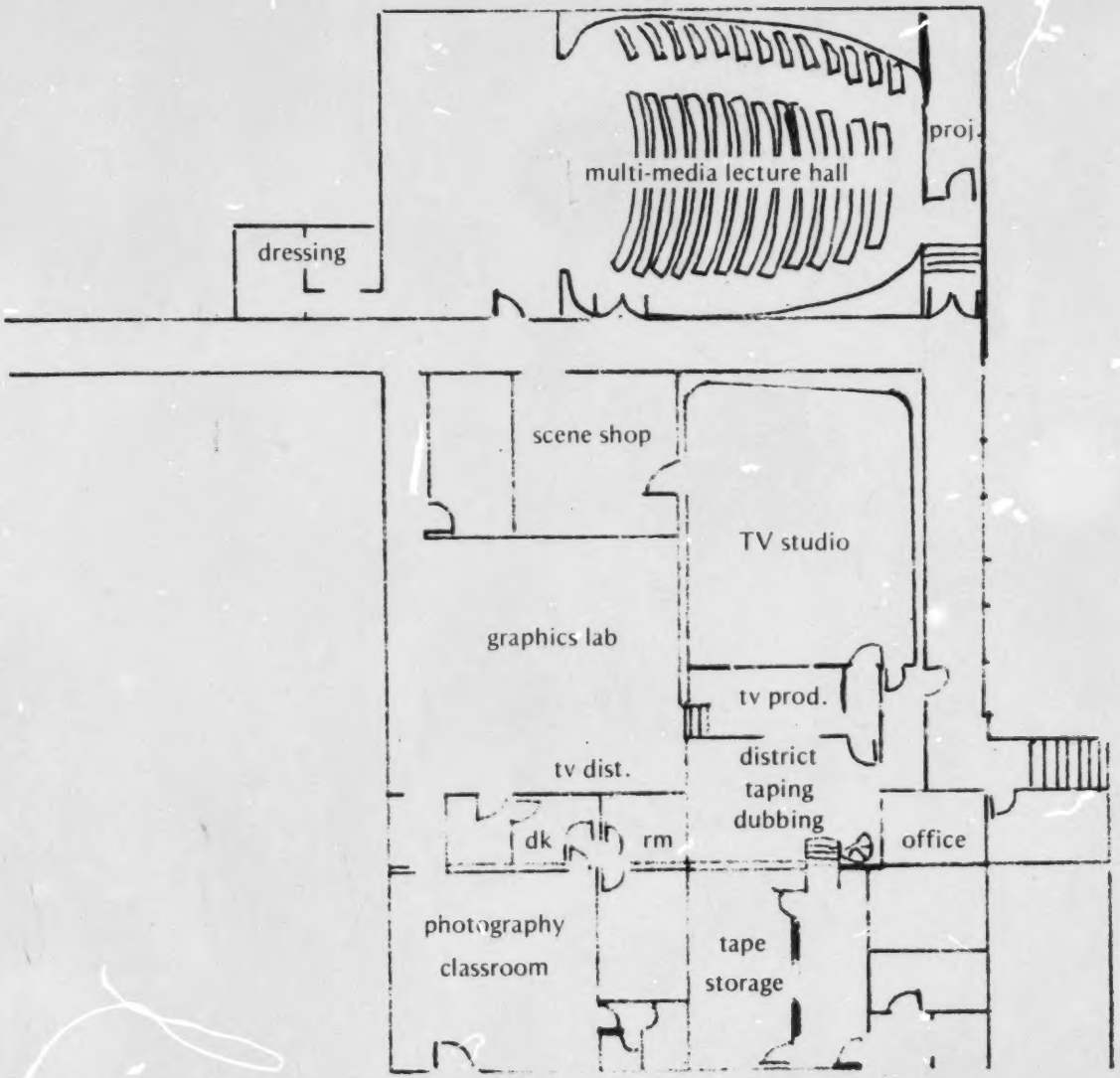
Evaluation Methods: (1) Written test based on text materials as well as on lectures by the teachers and guest consultants – specialists from commercial and public television.

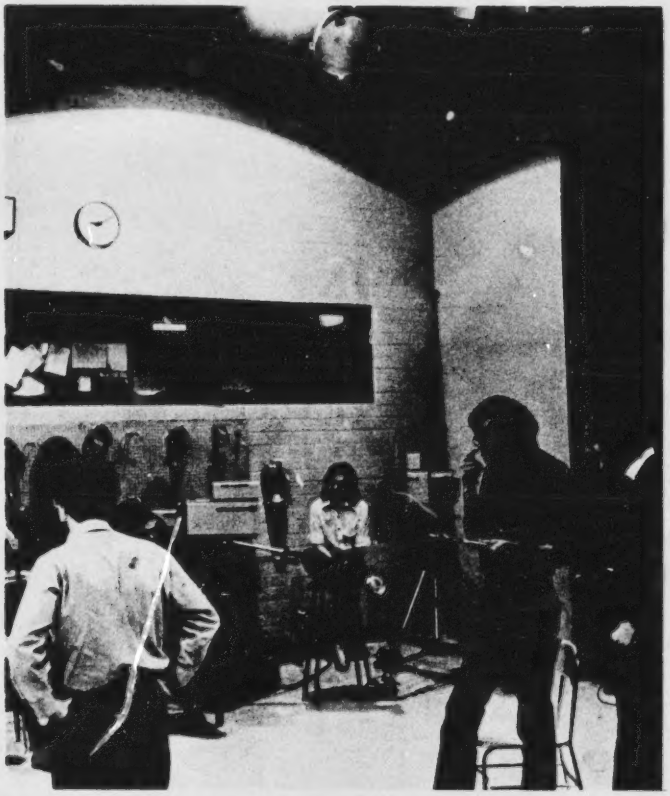
(2) Proficiency demonstrations by students as they work with the

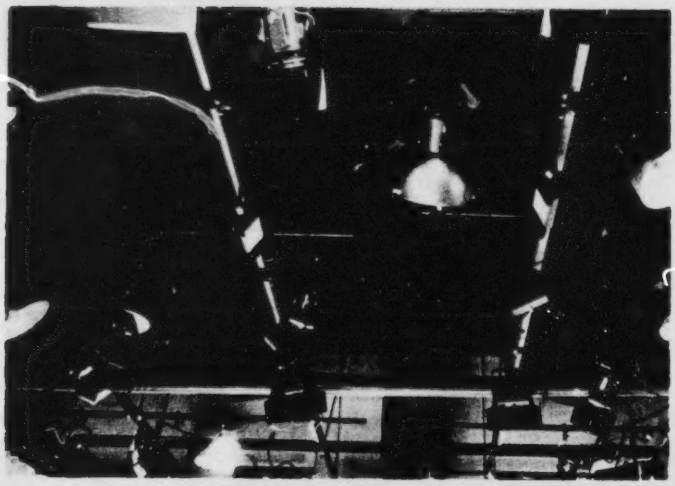
various pieces of equipment. This will be further explained under the unit plans and the five competency levels of advancement.

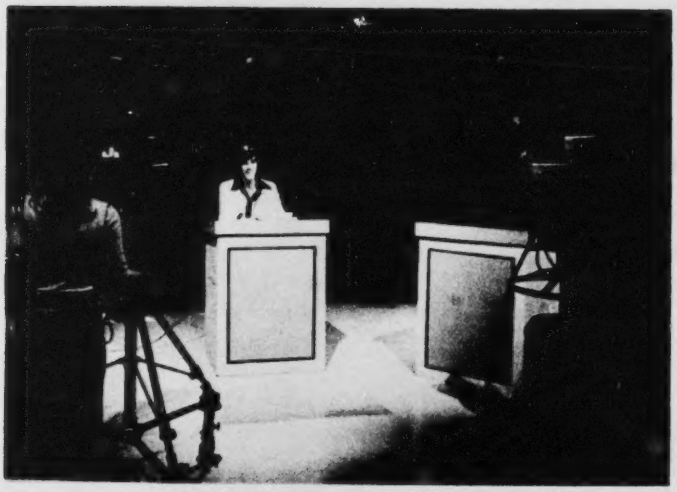
OPEN ENROLLMENT: The Salt Lake School District has an open enrollment policy in regards to the four exemplary vocational programs - one in each high school. A student from any of the four high schools can enroll in the vocational program of any other high school.

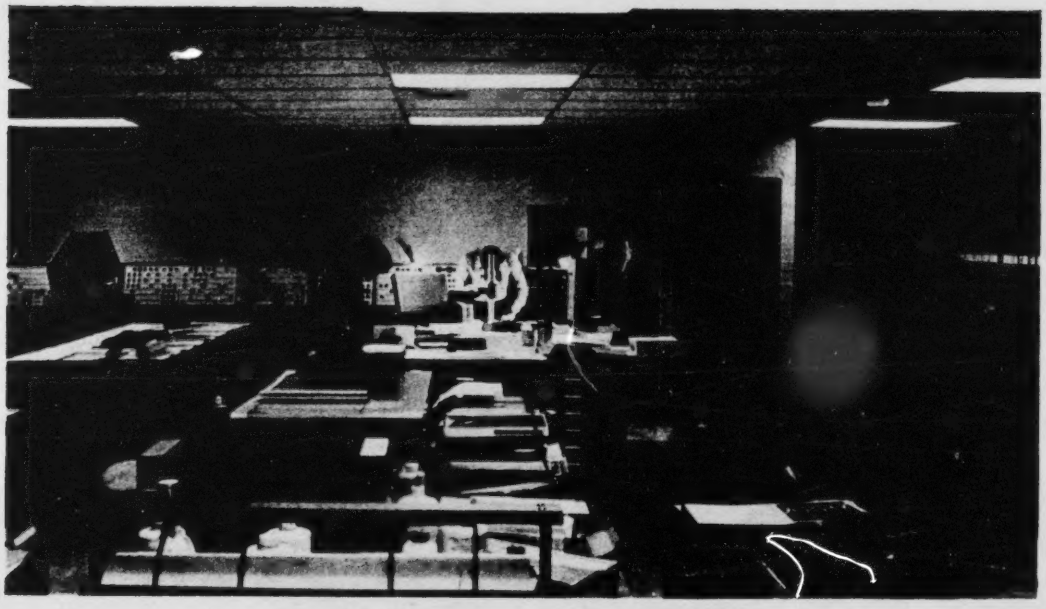
HIGHLAND HIGH MEDIA CENTER
Second Floor

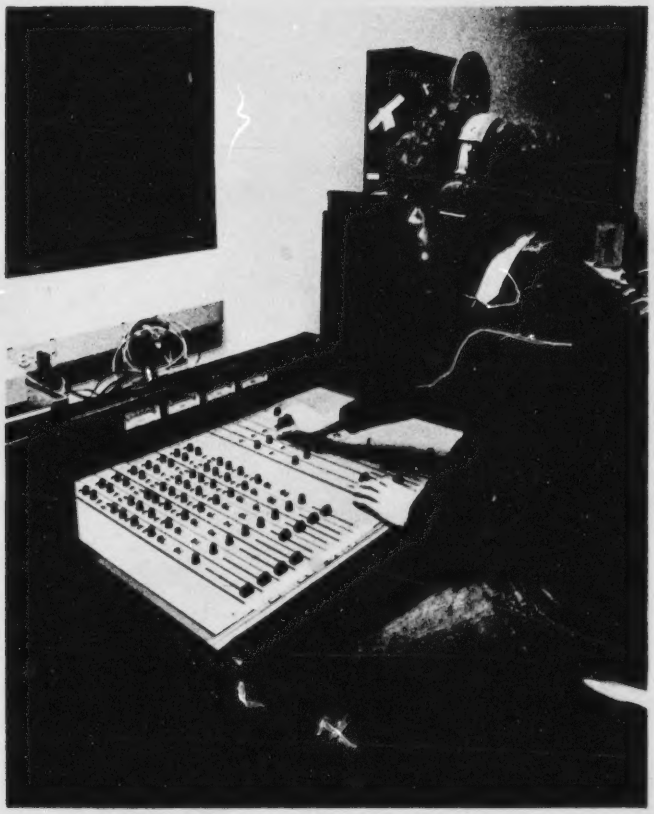


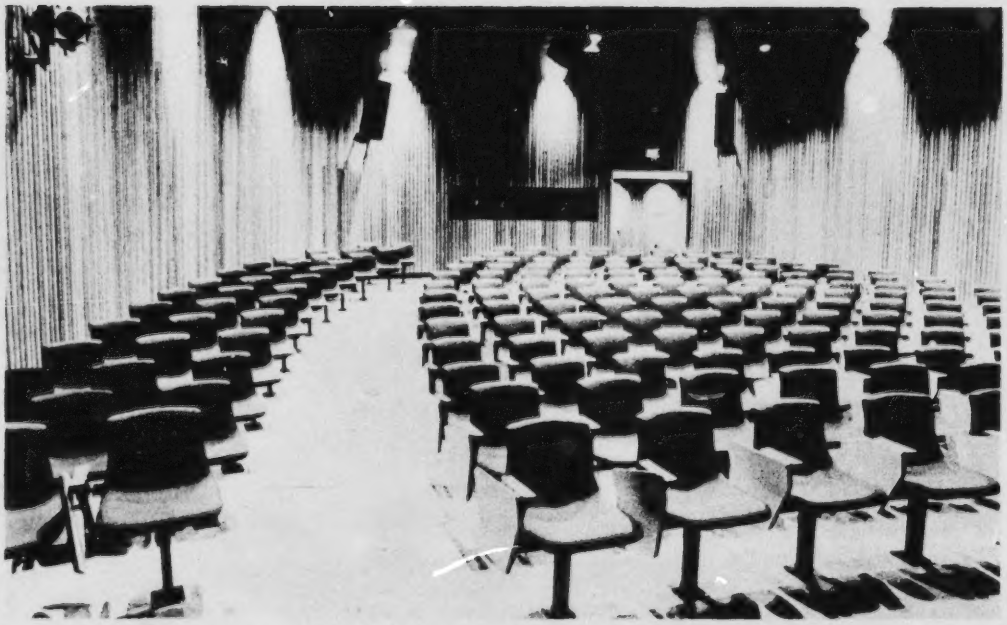












YEARLY TEACHING OBJECTIVES

A Three Year Comprehensive Teaching Program and Work Experience

First Year Program

Note: The introductory year in vocational television is concerned with a primary technical training, with a rudimentary knowledge of production techniques and with a working trade vocabulary.

Training Objectives:

A working hands-on use of black and white production equipment including:

A. Camera
B. Switcher-special effects generator
C. Audio Mixer, microphones, tape deck, record player
D. Picture composition
E. Basic TV graphics
F. 35 min. photography for television*
G. Televison lighting
H. Basic video tape recording
I. Use of S-8 and 16 mm motion* pictures

*It is recommended that first-year television students enroll in the basic photography class at Highland High.

Second Year Program

Note: The second-year program is concerned with an advanced technical training, with the introduction of program design and with program production.

Training Objectives:

1. A working hands-on knowledge of:
   A. Color cameras-lens operation
   B. Color monitors
   C. Color encoders
   D. Lighting for color
   E. Advancing effects generators
   F. Advanced switchers
   G. Multiplexers - film chain units
   H. Character generators
   I. Advanced TV graphics
   J. Chroma-key unit
   K. Video tape electronic editing and dubbing
   L. Closed circuit television distribution
   M. TV equipment patching and switching
   N. Audio tape production-record, edit, sound, on sound, sound with sound, and dubbing.
   O. Advanced use of 35 min. slides and 16 min. movie cameras*

Second Year Program - continued:

2. Introduction of program design concepts

*Advanced photography courses are recommended for second-year vocational television students.

Note: A successful completion of first year vocational television in a pre-requisite for this second year program. Continual evaluation of attitude and television ability is an adjunct of each succeeding semester of work in this field.

Third Year Program:

Note: The third year of study in vocational television program is oriented to inter-related phases:

1. The continuing sophistication of technical skills;
2. The understanding of the psychology of production concepts and design;
3. The practical application of learned skills in a work-study program.

Training Objectives:

1. Television production job deliniation and practice including:
   - A. Prop man
   - B. Cameraman
   - C. Floor Director
   - D. Audio Engineer
   - E. Video Engineer
   - F. Film Editor
   - G. Director
   - H. Producer
   - I. Program Director
   - J. Air Operations Manager
   - K. Production Manager

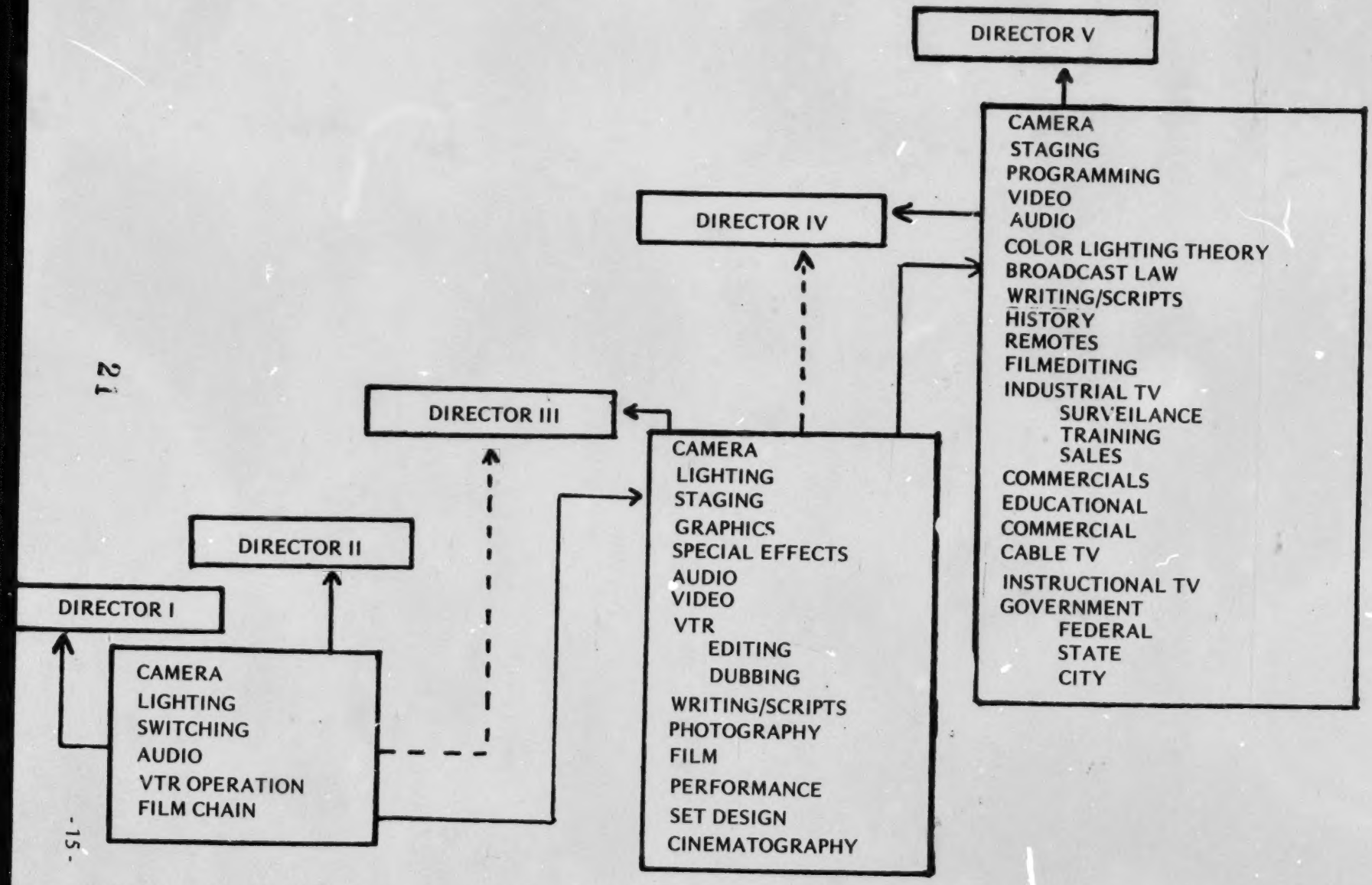
2. Technical Skills:
   - A. Multi-media applications
   - B. Advanced audio
   - C. Programmer use
   - D. Studio equipment lay-out design
   - E. Advanced lighting

3. Production Skills:
   - A. Design and production of commercials
   - B. Production of dramatic events
   - C. Sports productions
   - D. Documentary productions

Note: It is recommended that the second year studies be limited to those students most oriented to television as a vocation. They should be highly motivated and skilled in both technique and attitude as indicated by the previous two years of study.

The second year program, and to a lesser extent the first year program, is directly aimed at facilitating the transition from vocational television to employment in an industry which needs this kind of background - this can be in a commercial TV station, a cable TV station, or in schools, hospitals, public institutions or businesses using closed circuit television systems.

Highland High School
Vocational Television Instructional Organization



UNIT I BASIC B/W CAMERA OPERATION

Time 2-3 days
Competency Level I

Objectives:

General Statement:

Introduction to "Basic" Camera Principles and operation techniques, along with proper use of T.V. Language and name parts that are relative to cameras and their operation.

Skills Expectations:

Upon completion of Unit I, the student will be able to perform rudimentary camera skills, to achieve a level I competency rating in preparation for Level II, consisting of panning, tilting, dollying, trucking, focusing, and zooming, using proper language.

Instruction Method:

Read Chapter I - Emphasis on pages 33-37

Reinforced with classroom lectures and cemonstration - plus Vldeo tape about proper camera operation. Available Video Tape of actual programs will be incorporated to demonstrate use of those basics discussed.

Students will then be given a hands-on learning experience, utilizing the black & white production units.

Evaluation Methods:

1. A written test will be administered on text material, as well as classroom lectures and demonstration.
2. Proficiency demonstrations will be required - to determine familiarity with equipment, and use of proper terms. Students will pass a level I Performance Evaluation with 100% accuracy, preparing for a Level II Rating.

Vocabulary:

1. Camera head
2. View finder
3. Tripod (collapsible)
4. Tripod Dolly (collapsible)
5. Friction head
6. Cradle head
7. Cam head
8. Zoom lense
9. Zoom handle
10. Focus control
11. Tally light
12. Camera pedistal
13. Pan

Vocabulary:

14. Tilt
15. Zoom
16. Dolly
17. Truck
18. Focus
19. Monochrome
20. Color
21. Lens/lenses
22. Camera Characteristics:
    1. operating light level
    2. burn in
    3. contrast
23. Head room
24. Nose room

UNIT II LIGHTING, BASIC FOR T.V.

Time 8-10 days
Competency - Level I
Student will be expected to achieve a Level I rating, at the endo of this unit.

Objectives:

General Statement:

Introduction to lighting principles, the instruments used: their parts, and proper language necessary while executing basic lighting effects.

Skills Expectation:

Upon completion of this unit II, the student will be able to operate the lighting panel, effect '4 point' lighting (for people,) and selecte the proper instruments for the most minimal Light Requirements, using proper language to achieve Level I Competency.

Instruction Methods:

Chapter 4, Zettle, Reinforced by lectures and lighting article by Rick Williams and demonstrations from the teacher. Video tapes of network, and public T.V. will again be used to provide actual examples of ligting techniques, in common use. Student will then be given a hands-on learning opportunity utilizing the studio equipment.

Evaluation Methods:

1. Written test on text material and lecture/demonstration notes.

2. Proficiency demonstrations will be required - to determine familiarity with theory, equipment, and proper use of terms. Students will be able to pass a Level I performance evaluation with 100% accuracy, preparing for Level II rate of proficiency.

Vocabulary:

1. Technical lighting
2. Non technical lighting (aesthetic)
3. Directional light
4. Diffused light
5. Spot lights (hard)
6. Flood lights (soft)
7. Incandescent
8. Quartz-Iodine
9. Fluorscent
10. Fresnel spot light
11. Ellipsoidal spot light
12. Scoop (floodlight)
13. Strip light
14. Grid system

Vocabulary:

15. Dimmer
16. Circuit
17. 'c' clamp
18. Spread beam (de-focused)
19. Pinned beam (focused)
20. Reflector (reflector-unit)
21. Fresnel lens
22. Focusing apparatus
23. Barn doors
    2 way
    4 way
24. Contrast ratio
25. Light meter

UNIT III BASIC PRODUCTION SWITCHER OPERATION

Time 5-10 days
Competency Level i
Student has the option of taking the Level I competency tests prior to this unit - if passed can then move to level II

Objectives:

Introduction of switching principles and operation techniques along with the principles and operation techniques of a special effects generator. Cameras, their relationship to the switcher and their operation with the switcher will be understood.

Skill Expectations:

Upon completion of this course the student will be able to connect cameras to B/W switcher unit, balance the cameras against each other, switch successfully between cameras and VTR unit or film chain. The student will also memorize switcher panel and use monitors and audio commands to cameramen and film chain or VTR operator.

Instruction Method:

Chapters on switchers and special effects generators by Zittl and by Williams will be used as na introduction. Lectures and demonstrations will also be given by the teacher. Video tapes of commercial or public television will also be used to show what switcher can accomplish. Students will then be give a hands-on learning experience utilizing the black and white switcher units.

Evaluation Methods:

1. Written test on texts material as well as on lectures and on demonstrations.

2. Proficiency demonstrations - at least three separate ones by each student-designed for testing familiarity with the equipment, with its hook-up, with its operation and with the ability to work with other students.

Television Switcher Vocabulary:

1. Wipe
2. Dissolve
3. Super imposition
4. insert
5. fade
6. cut
7. bus
8. fader handles
9. input
10. output
11. (soft take)
12. preview bus
13. program bus
14. 'black'
15. test bars

UNIT IV BASIC AUDIO PANEL OPERATION

Time 5 days

Competency Level I

Student has the option of taking the test for the Level I competency in audio control prior to this unit and if successful, moving into Level II work in audio.

Objective:

Introduction of microphone hook up and placement and of operation of an audio mixing control panel. Basic knowledge of Vu meter operation in gain level control and of treble and bass control will also be taught. Use of auxiliary sound equipment such as, a turn table and tape recorder will be taught.

Skill Expectations:

Upon completion of this unit the student will be able to hook up and place microphones for best sound pick up. The student will be able to operate the audio mixing panel, the audio tape recorder, and the record turn table.

Instruction Methods:

Texts by Williams and Zittl will be used for general background reading. Teacher lecture and demonstrations will follow. Students will work directly with equipment on small production boards and with microphones and auxiliary sound gear.

Evaluation Methods:

1. Written tests on texts and lectures

2. Proficiency demonstrations - at least three by each student - with mixing panels and other equipment.

Television Audio Vocabulary:

1. gain
2. treble
3. bass
4. decible
5. cannon
6. phone jack
7. phono plug
8 mine jack
9. male plug
10. female plug
11. input
12. output
13. una-directional
14. omni directional
15. boom
16. hand held
17. stand (desk)
18. stand (floor)
19. lavalier
20. 'boom shadow'
21. level
22. 1000 cycle tone

UNIT V VIDEO TAPE RECORDER OPERATION

Time 2-4 days
Competency Level I

Objectives:

Introduction of basic principals of operation of the video tape recorder. This includes control of video and audio signal, tension control, and tracking signal in playback mode. This includes operation of reel to reel recorders as well as the cassette UC format recorders and playback units. At this point it does not include editing and dubbing techniques nor does it include color recording.

Skill Expectations:

Upon completion of this unit the student will be able to thread reel-to-reel tape machines, to perform fast forward and fast re-wind operations, to adjust tape tension and tracking controls, to connect cameras and monitors as well as microphones to VTR units through a production console.

Instruction Method:

This unit will depend largely on lecture and demonstration. It will utilize a great deal of hands-on work with the student and the equipment.

Evaluation Method:

The evaluation on this unit must of necessity be more on performance - a proficiency evaluation bears more weight than in previous units. There will be at least three evaluations per student.

T.V. Vocabulary:

1. Audio head
2. Video head
3. Control track
4. Tension
5. Tracking
6. Levels
7. Reel-to-reel
8. Cassette
9. Rewind
10. Fast two
11. Play/Record
12. Supply/Take up Reels

UNIT VI BASIC FILM CHAIN USE

Time 3-5 days
Competency Level I

Objectives:

General Statement:

Introduction to basic principles of operation of film chain. This includes operation of 16 mm projector, 8mm projector, and the slide projector.

Skill Expectations:

Upon completion of this unit the student will be able to thread 16mm and 8mm projectors, load 35mm slide projector. He will be able to change lamps in all projectors in the chain, and turn the machines on, and off - properly, and use as a video source through production console.

Instruction Methods:

This unit will rely heavily on lecture and demonstration. There will be a great deal of hands-on work for the student with the equipment.

Evaluation Method:

The evaluation will be more on performance. There will be a written quiz having to do with proper vocabulary. There will be at least 3 evaluations per student.

Vocabulary:

1. Magnetic Stripe (Mag. Stripe)
2. Optical Sound
3. 16mm
4. 8mm (super)
5. 35. mm
6. Film Chain (Island)
7. Sprocket Holes
8. Capstan
9. Gate
10. Supply Reed/Take-up Reel
11. Focus
12. Framing Adjust
13. On Loff
14. Leader
15. Silent Film
16. (SOF)
17. Mirror
18. Mutiplexer-(multiplex)
19. Forward - 16-8-35s
20. Reverse - 16-8-35s

UNIT VII GETTING STARTED

Time 1-2 days
Proficiency Level I

Objectives:

General Statement:

Introduction to the need for proper language in the control room/production area. Many of the words and phrases learned to his point will become valuable to the student at this time.

Skills Expectations:

Upon completion the student will be able to properly begin a taping session, using the following set of MEMORIZED steps:

a. to VTR - Roll and record the tape (VTR)
b. to entire crew - color bars (test)
   tone, (1000 KC) being recorded
   60 seconds
c. to entire crew - recording black
d. to entire crew - stand by -
   audio
   cam (source)
   talent (if any)

Instruction Methods:

In class lectures, and demonstration - effort primarily one of memorization.

Evaluation Methods:

Simply a matter of 100% memorization of the steps necessary for starting a recording.

Vocabulary: (phrases, mostly)

1. Stand By
2. Floor person (Manager
3. Card pullers
4. Cue!
5. "Roll & Record ---"
6. Up from Black

UNIT VIII DIRECTING - STEP I - II

Time - 5-10 days

Competency Level:

The student will have the opportunity to achieve the position of Step I, or, Step II Director. (He will have the knowledge behind him to do so - it's simply using it.)

Objectives:

General Statement:

This unit will be totally a hands-on unit - providing the student with a way to visually express his understanding of the previous seven units. Proper language, and use will be an important part of this unit.

Skills Expectation:

Upon completion, the student will have completed a tape. The sequence will be as described below:

Mtls
- 10 cards - numbered one to ten
- 2 easles
- full crew (choice of Dir. candidate)
  - A. Cams 2
  - B. C.P's 2
  - C. Floor Manager
  - D. VTR operator
  - E. Audio technician
  - F. Director
  - G. Technical Director
  - H. Lighting person
- 1 microphone for director
- 1 VTR
- 1 complete produciton facility (B/W or color)
- (card will be split - odd-even for odd-even cams)

The director, wearing the 'mic' will then tell the entire crew what he wants done - (the crew will do nothing until the director says it's to be done.) on ("up on card Cam I ----") Stand by to take/disolve to Pull Card I ----Stand by to take/dissolve to card 3 on Cam I --- Take/dissolve to card 3 on Cam I --- Take/Dissolve to Cam I - Etc. Etc.

Stand by to "Fade to black-fade to black"

Finish -

The student will have a production time limit - 20 minutes - and may attempt, as many times as necessary, to qualify.

Instruction Methods:

The instruction will be accomplished primarily through lectures, and hands-on rehearsal in the studio environment. The teacher will first perform thydrill and then supervise the rest of the class as they practice/rehearse.

Evaluation Methods:

The students will be able to see, and hear all of the tape that is recorded. Evaluation will be based on the proper use of commands, proper starting procedure - and accuracy of the sequented nature of the directors Upon completion - student will be Step I Dir.

Vocabulary: (Phrases)

Stand by to -

a. pull
b. take
c. dissolve
d. R & record

pull
take
dissolve
R & Record

Note- At this point, there will be a series of crews ready to do programs for the school, and the district.

Dir. II

Mtls. - Same cards 1-10
4 easles
full crew
1 microphone

Procedure:

1 3 2 4
5 7 6 8
9 10

1 2

Cards are set up alternately

Cam I has 1-3-5-7-9
Cam II has 2-4-6-8-10

With one change - there are 3 cards on one easle for Cam I and II on another -
A similar arrangement for Cam II

Thus, the director candidate has been given more to think about, and more to say.

He must now tell his crew:

Stand by to pan to card 3 on Cam I -
Pan to card 3 -
Freeze, or Hold on Card 3 -
Standby to take/dissolve to Cam I --
Take/dissolve to Cam I - Etc. Etc. --
until completion -

*Student will have a time limit of 20 minutes (prefer after school) to complete. Student may try as many times as he/she wants.

UNIT IX THE COLOR TELEVISION CAMERA

Time 5-10 days

Proficiency Level:

The student will be able to operate the Color Studio Camera at the Step II level.

Objectives:

General Statement:

Amplification of the basic principles of Camera operation, with the addition of optics theory, (Depth of field, focal length, 'f' stop) The many varieties of camera, and hardware available. Also given indoctrination in camera balancing, both on tripod, as well as in terms of picture.

Skills Objectives:

Upon completion of this unit the student will be able to make the basic camera moves with confidence, on the air, added to the ability to define any given part of a color or B/W camera.

Instruction Method:

Read Chapter I and II in Zettl. Material read will be discussed with illustrations and actual available hardward. Student will then be given a hands-on learning experience with the equipment.

Evaluation Method:

A written test,on material read plus lecture mtls.

For extra consideration papers - Topics to be the student's choice, approved by the teacher -- will be accepted. Proficiency demonstrations will be given, designed for detailed camera work on the floor, working with teacher and other students. The student has thc opportunity to achieve Level II Cam operator.

Vocabulary:

1. Live Truck
2. Live Dolly
3. Live Pan
4. Live Tilt
5. Live Zoom
6. Depth of Field
7. Focal Length
8. Lens Turret
9. Image Orthicon
10.
11.
12. Primary colors

Vocabulary:

13. 'channels'
14. pick-up tubes
15. Internal Opticla system
    a. prism
    b. mirrors
    c. dichroic mirrors
    d. relay lenses
    e. filters
16. Operating Light Level
17. Burn ID
18. Contrast Range
19. Panoram Dolly
20. Studio Crane
21. Arc
22. Lens
23. "C" mount
24. "TV-88"
25. Focal Length
26. Focus
27. 'F' Stop
28. Depth of Field

UNIT X LIGHTING FOR TELEVISION

Time: 5-10 days

General Statement

Proficiency Level:

The student will be able to properly light a variety of in-studio situations, using the proper instruments in the proper way.

Objectives:

Amplificaiton of the basic principles of lighting with the inclusion of color theory, lighting effects (silhouette, scrim use, dramatic, etc.). The many varieties of lighting instruments available.

Skills Objective:

Upon completion - the student will be able to select confidently, and use the proper instruments for lighting assignements with an intermediate degree of difficulty (Step II).

Instruction Method:

Read Chapter 4 in Zettl. Material read will be accompanied with discussion, and demonstration. Students will then be given hands-on learning experience with available equipment.

Evaluation Method:

A written test on reading, and lectures. Proficiency demonstrations will be given, designed for consistently high quality of lighting design. The student has the opportunity to achieve Level II lighting technique.

Vocabulary:

1. Spot
2. Lens (Fresnel)
3. Reflector
4. Scoop (flood)
5. Scrim
6. "Cookie"
7. Key light
8. Fill light
9. Back light
10. Directional
11. Elipsoidal
12. Grid
13. Dimmer
14. Quartz
15. Incandescent

UNIT XI SET CONSTRUCTION

Time 10-15 days

Proficiency Level:

The student will be able to physically construct sets and properties for use in the Television studio.

Objectives:

General Statement:

Introduction of the techniques of sets for television, their use and care. Explanation of construction techniques, storage methods, use methods (suspension, jacks, bracing, joining, etc.)

Skills Objectives:

Upon completion of this unit the student will be able to consturct, properly handle, assemble, and store set pieces and properties used for T.V. The student will further be able to properly identify proper set pieces and props for television.

Instruction Method:

Read Chapter 5 in Zettl. Material read will be discussed and illustrated with graphics, and actual hands-on experience.

Evaluation Method:

A written test on the material read, plus the lecture material. Proficiency tests will be given to determine the students abilities in the techniques of set instruction.

Vocabulary:

1. Sets (scenery)
2. Props (properties)
3. Standard Set Units
4. Special Sets Units
5. Hanging Units
6. Set pieces
7. Flats
8. Stiles
9. Top Rail
10. Bottom Rail
11. Toggle Rail
12. Corner Braces
13. Corner Block
14. Lashline
15. Lash Cleats
16. Tie off Cleats
17. Brace cleat or pin hinge
18. Blocks or stop cleats
19. Soft wall flat
20. Hard wall flats
21. Bracing
22. Twofolds/three folds
23. Pole Cat
24. Flat Face
25. Cyclorama
26. Masking tape
27. Drop
28. Drape
29. Pillar
30. Pylon
31. Periaktos
32. Sweep (inside/outside)
33. Ground Rows
34. Screens
35. Scene Dock
36. Open set
37. Floor Plan

UNIT XII GRAPHICS/T.V. ART

Time 5 - 10 days

Proficiency Level:

The student will be able to identify, and produce graphics suitable for T.V.

Objectives:

General Statement:

The student will receive the 'A B C's' of Graphic production:

A- Aspect ratio
B- Bleed area
C- Contrast
D- Detail
E- Essential Area
F- Feeling
G- Glare

As well as proper display methods.

Skills Objectives:

Upon completion of this unit the student will be able to identify and produce Graphics for television, using the proper tools and display techniques.

Instruction Method:

Read material in Chapter 6 in Zettl. Reading will be supplimented with discussion and demonstration. The student will then be given a hands-on learning experience.

Evaluation Method:

A written test on the material read, as well as lectures. Proficiency demonstrations will be given by the students, designed to show an understanding of the theories and design concepts involved in T.V. Graphics and art.

Vocabulary:

1. Aspect Ratio
2. Essential Area
3. Layout
4. contrast
5. Title Card
6. Illustration Title Card
7. Super Card
8. Pull titles
9. Flip titles
10. Slides
11. Telop/Balop
12. Crawl
13. Special Grpahics
14. Animations
15. Copyright

UNIT XIII SPECIAL EFFECTS

Time 10-15 days

Proficiency Level:

The student will be able to identify, design, and perform several studio, lighting, and electronic special effects.

Objectives:

General Statement:

Amplification of switching techniques, lighting effects, and staging problems and their solutions. Further discussion concerning effective use of the camera to achieve special effects.

Skills Objectives:

Upon completion of this unit, the student will be able to create and properly use any of a large series of special effects.

Instruction Method:

Read Chapter 7 in Zettl. Material read will be reinforced with discussion and demonstration. (An effort to explain the unlimited nature of special effects will be made. That is, special effects are limited only by imagination and thcrough understanding of the previous units.) The student will then receive hands-on experience with special effects. A discussion to emphasize proper use of special effects will take place.)

Evaluation Method:

A written test will be given on material read, plus lectures. Proficiency tests will be given to determine if the student understands the principles, and staging needs for aesthetically correct special effects.

Vocabulary:

1. Superimpositions ('Super')
2. Sweep Reversals
3. Polarity Reversals
4. Beam Control
5. Electronic Stretching
6. Electronic Compressing
7. The Wipe
8. Electronic Key
9. Flexitorn effects
10. Ostical effects
11. Rear projection (R.P.)
12. Front projection (F.P.)
13. Dissolves
14. Mirrors
15. Gobos
16. Mat Box
17. Mechanical effects

UNIT XIV AUDIO

Time 3-5 days

Proficiency Level:

The student will be able to operate the studio audio equipment with confidence, and accuracy.

Objectives:

General Statement:

Amplification of the basic principles of T.V. Sound, with the addition of some audio, physics (wave characteristics, dopler effect, frequency responses, etc.) Microphone characteristics will be further amplified and understood. Further expertise will be gained with the several other sources of audio available to the student technician. (Audio tape, film, VTR. etc. Also sound effects, and 'mixing' techniques.

Skills Objectives:

Upon completion of this unit the student will be able to make the proper choice of audio-sources, will understand audio patching systems. The student will be able to edit audio tape, dub, perform mixing functions and gain confidence in the knowledge to properly select audio sources.

Instruction Method:

Read Chapter 3 in Zettl. Material will be discussed with illustrations. Student will then be given a hands-on learning experience.

Evaluation Method:

A written test on material read, and lecture/demo material. Proficiency demonstrations will be performed designed to determine effective and proper understanding of the theories thus far advanced.

Vocabulary:

1. Audio
2. Mobile Microphones
3. Boom Microphone
4. Hand microphones
5. Lavaliere
6. Wireless Microphones
7. Unidirectional
8. Omnidirectional
9. Desk microphones
10. Camera microphone
11. Stand microphones
12. Hanging microphones
13. Hidden microphones
14. Contact microphones
15. Sound perspective
16. Sound effects
17. Recorded sound
18. Cardioid
19. Stationary Microphones
20. 'Level'
21. 'V U' Meter
22. Monitor
23. Output
24. Input
25. Mix

UNIT XV VIDEO

Time 5-10 days

Proficiency Level:

The student will be able to basically analyze the color video signal.

Objectives:

General Statement:

Introduction to the electronic characteristics of the video signal. (White level, black level, compression, sync, burst, etc.) and proper methods to evaluate and mildly control. Brief introduction to the waveform monitor and uses. The student will further understand the need for T.V. lightings.

Skills Objectives:

Upon completion of this unit the student will be able to use the waveform monitor to evaluate a proper (1 volt) video signal, and readily identify its parts, their functions, and reasons for their existance to provide the optismism picture from the Television Video source.

Instruction Method:

Read Telemation Introduction to the Video Signal by Rick Williams.

As well as discussion and lectures with demonstration, using set up, and evaluation equipment in the studio environment. The student will then participate in hands-on experience with the equipment.

Evaluation Method:

Test on reading materials and lecture information. The student will be given proficiency tests designed for qualitative presentation of the video signal, both graphic and electronic.

Vocabulary:

1. White level
2. Black level
3. Frequency
4. Carrier
5. Color Burst
6. Sync
7. Scan
8. Blanking
9. Lines
10. Fidelity
11. 'Level'
12. Phase
13. 'Vector'
14. Set up
15. Balance
16. Red, Blue, Green (RBG)
17. Noise
18. Dichroic mirrors
19. Convergence
20 IEE -
21. Flat Response
22. Gamma

UNIT XVI EDITING/VTR

Time 5 days

Proficiency Level:

The student will be able to perform clean video tape edits, with proper timing.

Objectives:

General Statement:

Break down of the Video Tape machine, and the characteristics of the varieties (Helical scan, Transverse scan, tracks, etc.)

Skills Objectives:

Upon completion of this unit the student will be able to edit video tape electronically using one or more video sources. The student will also understand the reasons why the function can be performed.

Instruction Method:

Read Chapter 8 in Zettl. Material read will be discussed and illustrated with available hardware. Students will then be given hands-on learning experience with equipment.

Evaluation Method:

A written test on material read, plus lecture material. A proficiency demonstration will be completed by the student, designed for 'clean' editing ability.

Vocabulary:

1. Transverse scanning
2. Helical Scanning
3. Track
4. Audio Track
5. Video Track
6. Control Track
7. Frame pulses
8. Mechanical editing
9. Tracking
10. Cue Track
11. Head
    video
    audio
12. Insert
13. Assemble
14. Capstan

UNIT XVIII FILM

Time 5 days

Proficiency Level:

The student will be able to shot and edit Super 8mm or 16mm film to meet standards of the film chain needs.

Objectives:

General Statement:

Introduction to the various characteristics of film. (frames per second, color needs, film chain particulars, cropping problems, etc.) Introduction to editing (cold, hot, tape,) Timing problems - (24 fps for T.V.), Audio problems, and general characteristics of motion picture photography.

Skills Objectives:

Upon completion of this Unit the student will be conversant with the needs of television photography (still and motion) The characteristics of the most common film types available. (black & white and color), proper editing techniques, sound on film (S.O.F.) and timing.

Instruction Method:

Read Chapter 8 in Zettl. With lectures and discussions both from the teacher, and professional guests in the field of Cinematography. These methods will be suplimented with demonstrations, by the students, of their facility with film.

Evaluation Method:

A written test on the material read, as well as the lecture material. Judgment will be made on individual films made on individual films made, considering technical requirements, (Exposure-, editing, timing, etc.) that are important to television film.

Vocabulary:

1. S.O.F.
2. Optical Track/Sound
3. Magnetic Track/Sound
4. Frame
5. 'A' - 'B' Roll
6. Splice
7. Edit
8. Cue
9. Leader (opaque)
10. Academy leader
11. Sprocket
12. Film Chain
13. Super 8mm
14. 16mm
15. Slide
16. Film Speed
17. Cement splice
18. Tape splice

GLOSSARY OF BLACK AND WHITE TELEVISION TECHNICAL TERMS

Aspect Ratio: The numberical ratio of picture width to height.

Back Porch: That portion of the composite picture signal which lies between the trailing edge of the horizontal sync pulse and the trailing edge of the corresponding blanking pulse.

Back Porch Tilt: The slope of the back porch from its normal horizontal position. Positive or negative refer respectively to upward or downward tilt to the right.

Band-width: The number of cycles per second expressing the difference between the limiting frequencies of a frequency band. For example, the 2.5-3.5 mc band has a width of 1 mc.

Black Compression: Amplitude compression of the signals corresponding to the black regions of the picture, thus modifying the tonal gradient.

Black Peak: The maximum excursion of the picture signal in the black direction at the time of observation.

Blacker-than Black: The amplitude region of the composite video signal below reference flack level in the direction of the synchronizing pulses.

Blanking (Picture): The portion of the composite video signal whose instantaneous amplitude makes the vertical and horizontal retrace invisible.

Blanking Level: The level of the front and back porches of the composite video signal.

Bleeding Whites: An overloading condition in which white areas appear to flow irregulary into black areas.

Blooming: The defocussing of regions of the picture where the brightness is at an excessive level, due to enlargement of spot size and halation of the fluorescent screen of the cathode-ray picture tube.

Bounce: An unnatural sudden variation in the brightness of the picture.

Breathing: Amplitude variations similar to "bounce" but at a slow regular rate.

Burned-in Image: An image which persists in a fixed position in the output signal of a camera tube after the camera has been turned to a different scene.

Camera Tube: See pickup tube.

Cathode-ray Tube: An electron tube assembly containing an electron gun arranged to direct a beam upon a fluorescent screen. Scanning by the beam can produce light at all points in the scanned raster.

Clamper: A device which functions during the horizontal blanking or sync interval to fix the level of the picture signal at some predetermined reference level at the beginning of each scanning line.

Clamping: The process that establishes a fixed level for the picture signal at the beginning of each scanning line.

Clipping: The shearing off of the peaks of a signal. For a picture signal this may affect either the positive (white) or negative (black) peaks. For a composite video signal, the sync signal may be affected.

Compression: An undesired decrease in amplitude of a portion of the composite videsignal relative to that of another portion. Also, a less than proportional change in output of a circuit for a change in input level. For example, compression of the sync pulse means a decrease in the precentage of sync during transmission.

Contrast: The range of light and dark values in a picture, or the ratio between the maximum and minmum brightness values. For example, in a high contrast picture there would be intense blacks and whites whereas a low contrast picture would contain only various shades of grey.

Crosstalk: An undesired signal interfering with the desired signal.

Cut-off Frequency: That frequency beyond which no appreciable energy is transmitted. It may refer to either an upper or lower limit of a frequency band.

Damped Oscillation: Oscillation which, because the driving force has been removed, gradually dies out, each swing being smaller than the preceding in smooth regular decay.

Definition: See Resolution - (horizontal) and (Vertical).

Delay Distortion: Distortion resulting from non-uniform speed of transmission of the various frequency components of a signal; i.e., the various frequency components of the signal have different times of travel (delay) between the input and the output of a circuit.

Detail: Refers to the most minute elements in a picture which are distinct and recognizable. Similar to definition or resolution.

Differential Gain: The amplitude change, usually of the 3.6 mc color subcarrier, introduced by the overall circuit, measured in db or per cent, as the subcarrier is varried from blanking to white level.

Differential Phase: The phase change of the 36. mc color subcarrier introduced by the overall circuit, measured in degrees, as the subcarrier is varied from blanking to white level.

Displacement of Porches: Refers to any difference between the level of the front porch and the level of the back porch.

Distortion: The departure, during transmission or amplification, of the received signal wave form from that of the original transmitted wave form.

Driving Signals: Signals that time the scanning at the pickup device.

Echo (or Reflection): A wave which has been reflected at one or more points in the transmission medium, with sufficient magnitude and time difference to be perceived in some manner as a wave distinct from that of the main or primary transmission. Echoes may be either leading or lagging the primary wave and appear in the picture monitor as reflections or "ghosts".

Edge Effect: See Following or Leading White and Following or Leading Black.

Equalizing Pulses: Pulses of one-half the width of the horizontal sync pulses which are transmitted at twice the rate of the horizontal sync pulses during the blanking intervals immediately preceding and following the vertical sync pulses. The action of these pulses causes the vertical deflection to start at the same time in each interval, and also serves to keep the horizontal sweep circuits in step during the vertical blanking intervals immediately preceding and following the vertical sync pulse.

Expansion: An undesired increase in amplitude of a portion of the composite video signal relative to that of another portion. Also, a greater than proportional change in the output of a circuit for a change in input level. For example, expansion of the sync pulse means an increase in the percentage of sync during transmission.

Field: One-half of a complete picture (or frame) interval, containing all of the odd or even scanning lines of the picture.

Field Frequency: The rate at which a complete field is scanned, nominally 60 times a second.

Flash: Momentary interference to the picture of a duration of approximately one field or less, and of sufficient magnitude to totally distort the picture information. In general, this term is used alone when the impairment is of such short duration that the basic impairment cannot be recognized. Sometimes called "Hit".

Fly-back: See Horizontal retrace.

Following (or Trailing) Blacks: A term used to describe a picture condition in the edge following a white object is overshaded toward black. The object appears to have a trailing black border. Also called "trailing reversal".

Following (or Trailing) Whites: A term used to describe a picture condition in which the edge following a black or dark gray object is shaded toward white. The object appears to have a trialing white border. Also called "trailing reversal".

Frame: One complete picture consisting of two fields of interlaced scanning lines.

Frame Frequency: The rate at which a complete frame is scanned, nominally 30 frames per second.

Front Porch: That portion of the composite picture signal which lies between the leading edge of the horizontal blanking pulse, and the leading edge of the corresponding sync pulse.

Frame Roll: A momentary roll.

Gain-frequency Distortion: Distortion which results when all of the frequency components of a signal are not transmitted with the same gain or loss. A departure from "flatness" in the gain-frequency characteristic of a circuit.

Ghost: A shadowy or weak image in the received picture, offset either to the left or right of the primary image, the result of transmission conditions which create secondary signals that are received earlier or later than the main or primary signal. A ghost displaced to the left of the primary image is designated as "leading" and one displaced to the right is designated as "following" (lagging). When the tonal variations of the ghost are the same as the primary image, it is designated as "positive" and when it is the reverse, it is designated as "negative".

Glitch: A form of low frequency interference, appearing as a narrow horizontal bar moving vertically through the picture. This is also observed on an oscilloscope at field or frame rate as an extraneous voltage pip moving along the signal at approximately reference black level.

Halo: Most commonly, a dark area surrounding an unusually bright object, caused by overlaoding of the camera tube. Reflection of studio lights from a piece of jewelry, for example, might cause this effect. With certain camera tube operating adjustments, a white area may surround dark objects.

Height: The size of the picture in a vertical direction.

High-Frequency Distortion: Distortion effects which occur at high frequency. Generally considered as any frequency above the 15.75 kc line frequency.

High-Frequency Interference: Interference effects which occur at high frequency. Generally considered as any frequency above the 15.75 kc line frequency.

High-lights: The maximum brightness of the picture, which occurs in regions of highest illumination.

Hit: See Flash.

Horizontal Blanking: The blanking signal at the end of each scanning line.

Horizontal Displacements: Describes a picture condition in which the scanning lines start at relatively different points during the horizontal scan. See serrations and jitter.

Horizontal Retrace: The return of the electorn beam from the right to the left side of the raster after the scanning of one line.

Horizontal (Hum) Bars: Relatively broad horizontal bars, alternately black and white, which extend over the entire picture. They may be stationary, or my move up or down. Sometimes referred to as a "venetian blind" effect. Caused by approximate 60 cycle interfering frequency, or one of its harmonic frequencies.

Iconoscope: A camera tube in which a high velocity electron beam scans a photoemissive mosaic which has electrical storage capability.

Interference: In a signal tramission path, extraneous energy which tends to interfere with the reception of the desired signals.

Interlaced Scanning (Interlace): A scanning process in which each adjacent line belongs to the alternate field.

Ion: A charged atom, ususually an atom of residual gas in an electron tube.

Ion Spot: A spot on the fluorescent surface of a cathoderay tube, which is somewhat darker than the surrounding area because of bombardment by negative ions which reduce the sensitivity.

Ion Trap: An arrangement of magnetic fields and apertures which will allow an electron beam to pass through but will obstruct the passage of ions.

IRE: The institute of Radio Engineers

IRE Roll-off: The IRE standard oscilloscope frequency response characteristic for measurement of level. This characteristic is such that a 2 megacycles the response is approximately 3.5 db below that in the flat (low frequency) portion of the spectrum, and cuts off slowly.

IRE Scale: An oscilloscope scale in keeping with IRE Standard 50, IRE 23.S1 and the recommendations of the Joing Committee of TV Broadcasters and Manufacturers for Coordination of Video Levels.

Jitter: A tendency toward lack of synchronization of the picture. It may refer to individual lines in the picture or to the entire field of view.

Kinescope: Frequently used to mean picture tubes in general. However, this name has been copyrighted.

Kinescope Recording: A motion picture film recording of the presentation shown by a picture monitor. Also known as Television Recording (TVR), Vitapix, etc.

Leading Blacks: A term used to describe a picture condition in which the edge preceding a white object is overshaded toward black. The object appears to have a preceding or leading black border.

Leading Whites: A term used to describe a picture condition in which the edge preceding a black object is shaded toward white. The object appears to have a preceding or leading white border.

Line Frequency: The number of horizontal scans per second, nominally 15,750 times per second.

Low-frequency Distortion: Distortion effects which occur at low frequency. Generally considered as many frequency below the 15.75 kc line frequency.

Meshbeat: See Moire.

Microphonics: In video transmission, refers to the mechanical vibration of the elements of an electron tube resulting in a spurious modulation of the normal signal. This usually results in erratically spaced horizontal bars in the picture.

Microsecond: One millionth of a second.

Moire: A wavy or satiny effect produced by convergence of lines. Usually appears as a curving of the lines in the horizontal wedges of the test pattern and is most pronounced near the center where the lines forming the wedges converge. A Moire pattern is a natural optical effect when converging lines in the picture are nearly parallel to the scanning lines. This effect to a degree is sometimes due to the characteristics of color picture tubes and of image orthicon pick up tubes (in the latter termed "meshbeat").

Monochrome Transmission (Black and White): The transmission of a signal wave which represents the brightness values in the picture, but not the color (chrominance) values in the picture.

Multiple Blanking Lines: Evidence by a thickening of the blanking line trace or by several distinct blanking lines as viewed on an oscilloscope. May be caused by hum.

Negative Image: Refers to a picture signal having a polarity which is opposite to normal polarity and which results in a picture in which the white areas appear as black and vice versa.

NTSC: National Television System Committee.

Noise: The word "noise" is a carryover from audio practice. Refers to random spurts of electrical energy or interference. May produce a "salt-and-pepper" pattern over the picture. Heavy noise sometimes is called "snow".

Orthicon (Conventional): A camera tube in which a low-velocity electron beam scans a photoemissive mosaic on which the image is focussed optically and which has electrical storage capability.

Orthicon (Image): A camera tube in which the optical image falls on a photoemissive cathode which emits electrons that are focussed on a target at high velocity. The target is scanned from the rear by a low-velocity electron beam. Return beam modulation is amplified by an electron multipler to form an overall light sensitive device.

Orthicon Effect: One or more of several image orthicon impairments that have been referred to as "Orthicon Effect" as follows:

1. Edge effect
2. Meshbeat or moire
3. Ghost
4. Halo
5. Burned in image

It is obviously necessary to indicate specifically the effect or effects experienced and, therefore, it is recommended that use of this term be discontinued.

Overshoot: An excessive response to an undirectional signal change. Sharp overshoots are sometimes referred to as "spikes".

Pairing: A partial or complete failure of interlace in which the scanning lines of alternate fields do not fall exactly between one another but tend to fall (in pairs) one on top of the other.

Peak-to-Peak: To amplitude (voltage) difference between the most positive and the most negative excursions (peaks) of an electrical signal.

Pedestal: This term is obsolete.

Pedestal Level: This term is obsolete; "blanking level" is preferred

Percentage Sync: The ratio, expressed as a percentage, of the amplitude of the synchronizing signal to the peak-to-peak amplitude of the picture signal between blanking and reference white level.

Photoemissive: Emitting or capable of emitting electrons upon exposure to radiation in and near the visible region of the spectrum.

Pickup Tube: An electron-beam tube used in a television camera where an electron current or a charge-density image is formed from an optical image and scanned in a predetermined sequence to provide an electrical signal.

Picture Monitor: This refers to a cathode-ray tube and its associated circuits, arranged to view a television picture.

Picture Signal: That portion of the composite video signal which lies above the blanking level and contains the picture information.

Picture Tube: A cathode-ray tube used to produce an image by variation of the intensity of a scanning beam.

Pigeons: Noise observed on picture monitors as pulses or bursts of short duration, at a slow rate of occurrence - a type of impulse noise.

Highland High Vocational TV Training Rating

Name _____ Social security no. _____
last

Grade level _____ Date _____ Age _____ Phone _____

Address

CAMERA OPERATION

STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__

LIGHTING

STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__

AUDIO

STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__

DIRECTING

STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__

VISUALS-GRAPHIC

STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__

VTR-DUBBING-EDITING

STEP1__STEP2__STEP 3__
STEP1__STEP2__STEP 3__
STEP1__STEP2__STEP 3__
STEP1__STEP2__STEP 3__

FILM CHAIN

STEP1__STEP2__STEP 3__
STEP1__STEP2__STEP 3__
STEP1__STEP2__STEP 3__
STEP1__STEP2__STEP 3__

SET DESIGN

STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__

PHOTOGRAPHY

STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__

FLOOR MANAGEMENT

STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__
STEP 1__STEP 2__STEP 3__

GENERAL RATING STATEMENT

ON-THE-JOB TRAINING

EMPLOYMENT

50

HIGHLAND HIGH SCHOOL VOCATIONAL TELEVISION

LOCATION WORK PERMISSION

_____ has my permission to go off the school grounds when assignments require for television production work during the periods he/she is registered for the Vocational Television Production Class. I understand that this out-of-school work is necessary for the television production training and curriculum.

I understand that much of this out-of-school work and most of the transportation from the school to the job site will be unsupervised and will require a high degree of self-responsibility on the part of my student. As such, I will not hold the school, the teacher, or the administration responsible for any accident or injury that might occur as a result of these excursions.

result of these excursions.

_____ _____

Date (Parent or Guardian)

Phone _____

HVS

Location Work Pass

Highland Television Services _____

Date: _____

me: from _____ to _____

Place: _____

Purpose: _____

_____

_____

Authorized by

_____

School Phone 484—4343 Ext. 53 or 57

51

WEEK OF

HIGHLAND HIGH VOCATIONAL TELEVISION **HHTVS**

	LESSON OBJECTIVE	LESSON OUTLINE	ACTIVITIES
MONDAY	Unit Crew		
TUESDAY	Unit Crew		
WEDNESDAY	Unit Crew		
THURSDAY	Unit Crew		
FRIDAY	Unit Crew		

HIGHLIGHTS OF THE WEEK	FILMS AND FILMSTRIPS	FIELD TRIPS AND RESOURCE PERSONS

AREA - MATERIAL	TIME PER OBJECTIVE	EVALUATION

SPECIAL DUTY AND ROOM ASSIGNMENTS	SPECIAL INTEREST	VISITORS

WEEK OF

HIGHLAND HIGH VOCATIONAL TELEVISION **HHTVS**

	LESSON OBJECTIVE	LESSON OUTLINE	ACTIVITIES
MONDAY	Unit Crew		
TUESDAY	Unit Crew		
WEDNESDAY	Unit Crew		
THURSDAY	Unit Crew		
FRIDAY	Unit Crew		

HIGHLIGHTS OF THE WEEK	FILMS AND FILMSTRIPS	FIELD TRIPS AND RESOURCE PERSON

AREA - MATERIAL	TIME PER OBJECTIVE	EVALUATION
SPECIAL DUTY AND ROOM ASSIGNMENTS	SPECIAL INTEREST	VISITORS

HIGHLAND HIGH VOCATIONAL TELEVISION

WEEKLY ASSIGNMENT SHEET

WEEK MONTH

TEACHING UNIT

PROJECT

PHOTOGRAPHY INSTRUCTION	DUBBING	ENGINEERING	DIRECTOR	AUDIO	CAMERA	GRAPHICS	FILM CHAIN	SCRIPTING	FLOOR MANAGER	MAINTENANCE	PRODUCTION PHOTOGRAPHY	Attendance MON	TUE	WED	THU	FRI	TOTAL HOURS	WEEKLY GRADE

HHTVS SCRIPT FORM

VIDEO	AUDIO

PRODUCTION NR _____

NAME _____ _____ DATE _____

CREW POSITION _____

CREW DESIGNATION _____ APPROVAL _____

PRODUCTION SCHEDULE

	TIME	LOCATION
MONDAY		
TUESDAY		
WEDNESDAY		
THURSDAY		
FRIDAY		
SATURDAY		

DIRECTOR _____

EVALUATION

SIGNED _____

HIGHLAND HIGH TV STUDIO

PRODUCTION SCHEDULE **MONTH** **YEAR**

UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.
UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.
UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.
UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.
UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.	UNIT NO. PROD. NO.

T.V. TECHNICIAN COURSE

Lecture 1. Color Fundamentals
- Compatability
- Scanning Principles
- Resolution and band width
- Monochrome
- Three variables in Color
- Primary colors
- Displaying R.G.B. Colors

Lecture 2. Electronic aspects of compatible Color T.V.
- Matrixing
- Band shaping
- Two phase modulation
- Frequency interlace
- Color Frequency Standards
- The Color T.V. System

Lecture 3. Color Fidelity
- Color characteristics of the eye
- Ref. White
- System Transfer characteristics
- Distortions in encoding & decoding processes
- Distortions in Transmission System
- Gain & phase characterisitics
- Envelope delay

Lecture 4. Colorplex or (Encoder)
- Basic functions
- Design Features
- Matrixings band shaping
- Aperature compensation
- Modulators & carrier balance
- Adders & output amplifiers
- Color plexor operation
- Wave forms

Lecture 5. Live Cameras
1. Set up
2. Block diagram
   - Optical system
   - Controls
   - Processing anys.
   - Test Chart lighting
3. V - Camera

Lecture 6. Color Film Equipment
- Methods of Producing Color film
- Multiplex operation
- Setting up film chain with test slides

Lecture 7. Synecronizing generators
- Color test equipment
- Color Bar Generator
- Cross Hatch
- Stair Steps
- Frequency checking with wedge
- Test pattern
- Interpreting test charts

Lecture 8. Associated Equipment
- Color tape recorders
- Quad type
- Helical Scan
- Care of heads & tape (Denny)
- Tape Slicing (Denny)

Lecture 9. Transmitters
- Television station field trips
  filled in during the course

Lecture 10. F.C.C. Examination
- Questions & answers
  to end of course

THE HIGHLAND HIGH LEARNING CENTER

By LaMar Nagle
Salt Lake City School District

On June 6, 1968, a proposal entitled "An Instructional Materials and Distribution Center for Highland High School" was submitted in order to begin work on the development of an integrated media center at Highland High School in Salt Lake. This September, almost six years later, the new center was completed and opened for full operation. The center has 32,000 feet of space on two floors, and features storage and retrieval of all formats of information including print, non-print and video tapes.

The original proposal was evaluated and revised by several area specialists in the district. After tentative approval from Edward Parker, the school principal, and Arthur Wiscombe, District Superintendent, the idea was accepted as feasible and returned to the school staff. At this point, departments, committees and individuals contributed more ideas and suggestions on media needs. These suggestions were evaluated by the school media staff, LaMar Nagle and Dorothy Peterson, and the district media specialist, Harold Bell. Both Utah media standards and national library standards were used to formulate many of the space requirements, however, some areas were innovative enough to require more research and original thinking in their design.

It was decided, for example, that the learning materials would be shelved as far as possible by department and by groups, i.e., 300 and 900 materials for social studies and then the social studies, English, art, music, contiguously as the humanities group. It was also decided to provide shelving for future acquisitions. Thus the 16,000 volumes of print materials currently held was seen as being doubled for the growth factor and this shelfing was therefore planned into the internal design.

Under the capital budget, an additional 8,000 titles of print materials, as well as several thousand non-print titles, were selected by departmental representatives in a workshop, and most of these selections will be shelved by this fall. It was also planned that many of the non-print materials will be shelved with the print materials and that the translating media equipment (projectors and tape recorders) will be housed in carrels in the various subject areas.

Under the basic concept of "media center," teachers are regarded as learning resources; therefore, they are housed on the main floor among the study tables adjacent to shelving areas. These "office" areas are small(6'x8'), open, moveable conference areas designed to allow a modicum of privacy for consultation with either one or two students, while maintaining a feeling of complete accessibility to the students. As mentioned, these areas are moveable; thus an area that is heavily used can have more than one "office" located near it.

Another unique feature of the information retrieval system is the television carrels. To begin with, six carrels were equipped with JVC video cassette playback units and 12" Sony monitors. Cassettes nd earphones are checked out from an adjacent control desk and operated on an individual basis by students. It is also possible for these TV sets to be swtiched into the school's five-channel closed circuit central TV distribution system. At present, 200 of the district's 1,000 television titles are available on the cassette format in the center, eventually, all pertinent titles will be transcribed onto the cassette format from the reel-to-reel format. The limiting factor here is the construction of time necessary in the dubbing process. Parenthetically, it might be well to note that the Salt Lake district television services are located at Highland High and the master tape library of the district is there.

The main floor of the center will seat just under 400. It has three small, glassed conference areas, a glassed typing area, and a large glassed seminar area. In addition, there is a separate classroom, an inner stack room, a processing room, three media offices and a professional library area. There are also two check-out desks; one exiting into the main interior hall and one exiting into a main outside entrance, making it possible to keep the center open for night use if staffing monies become available. In fact, the center even has rest rooms and a drinking fountain so it can be a self-contained entity, keeping the security of the other parts of the building in the event of seperate use.

The second floor of the center is a three-in-one area. It is a materials production area with graphics and photography labs; it is a learning area with a 193-seat multi-media lecture hall, and it is a vocational area with a full-color television studio. Each of these sub-areas work to produce an integrated whole. For example, the graphics lab produces teaching materials such as charts, posters, overhead transparencies and printed materials, and also serves to teach vocational television students that part of the TV art. This integration is also true of the television studio complex, of the multi-media lecture hall, and of the photgraphic lab. Each is an interlocking complement to the other. Photographic skills and techniques are absolutely essential to TV production and to multi-media presentations. And, in like manner, the programming skills used in any multimedia presentation must be mastered in the complex process of television production, whether taped or live. The theatre also serves as a second TV studio and as a sound stage in television production.

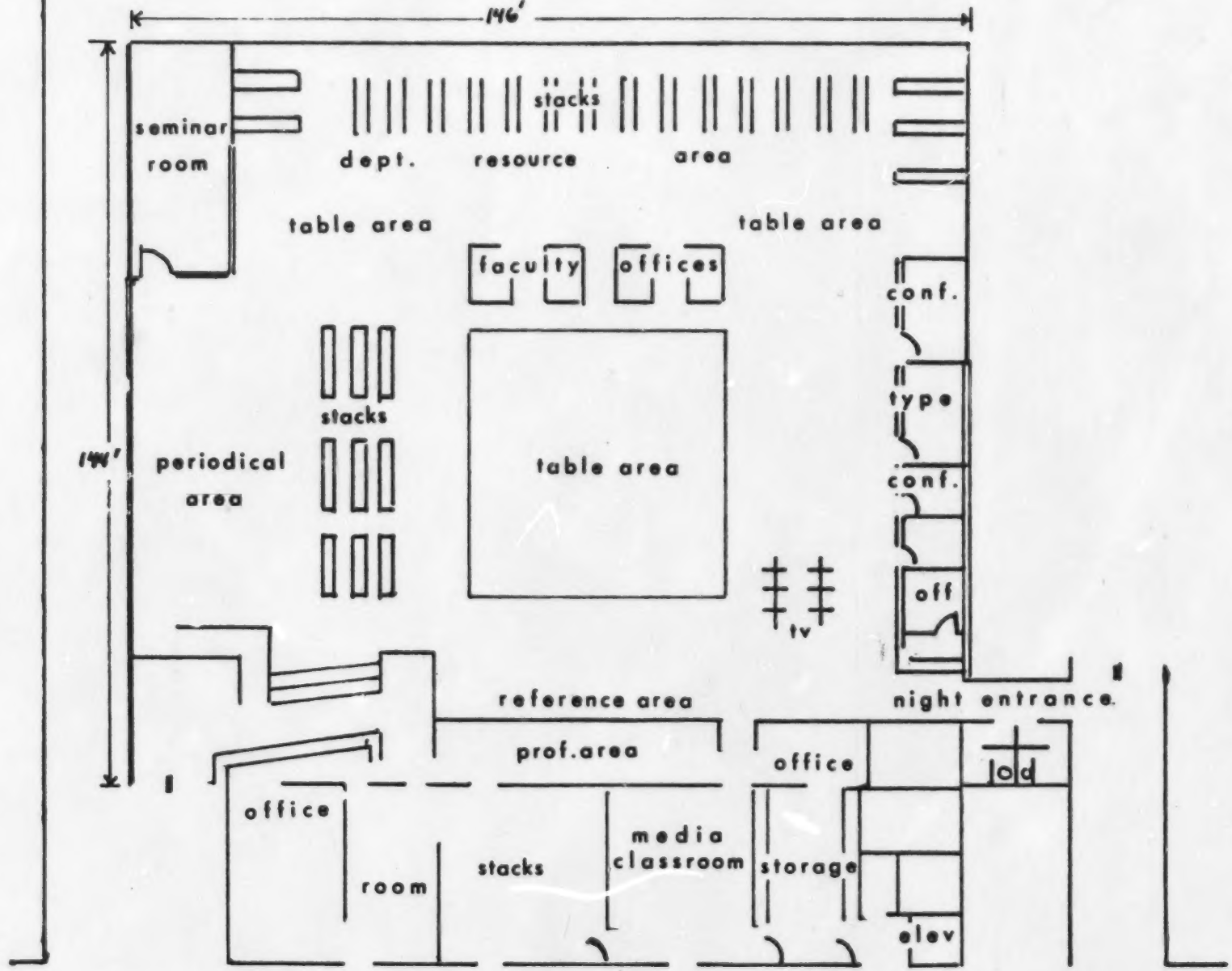
Perhaps the television program of the center deserves more than a cursory glance since it has features not to be found in any other school in Utah or maybe not even in most schools in the nation. As mentioned above, it has a full color studio, with a complete complement of sophisticated production equipment: three color cameras, a complete special effects generator, a chroma key unit, a character generator, a multiplexer for16mm, Super 8 and 35mm slide input, an engineering section, electronic editing, and dubbing equipment to allow off-the-air taping and multiple copying. In addition, the studio itself is in every sense a legitimate studio. It is a 40' x 32' double-walled, air-conditioned room that is curved and coved to afford infinity shots. It is painted blue for total keying possibilities and in addition, it has a double track curtian system allowing fro draping with either black or white curtains, and for dividing areas within the studio for pre-setting. In short, it is a professional studio, capable of professional work and intended to produce students vocationally attuned to the realities of this field.

While the basic sketches of the center were produced by the media coordinator, tribute must be given to Bill Nelson and Abe Gilles of Environmental Associates, Architects, Salt Lake City. It was they who put together all the details and combined them into an aesthetically pleasing learning environment. They did this within the confines of their task while giving credence to the work and planning of the educators involved.

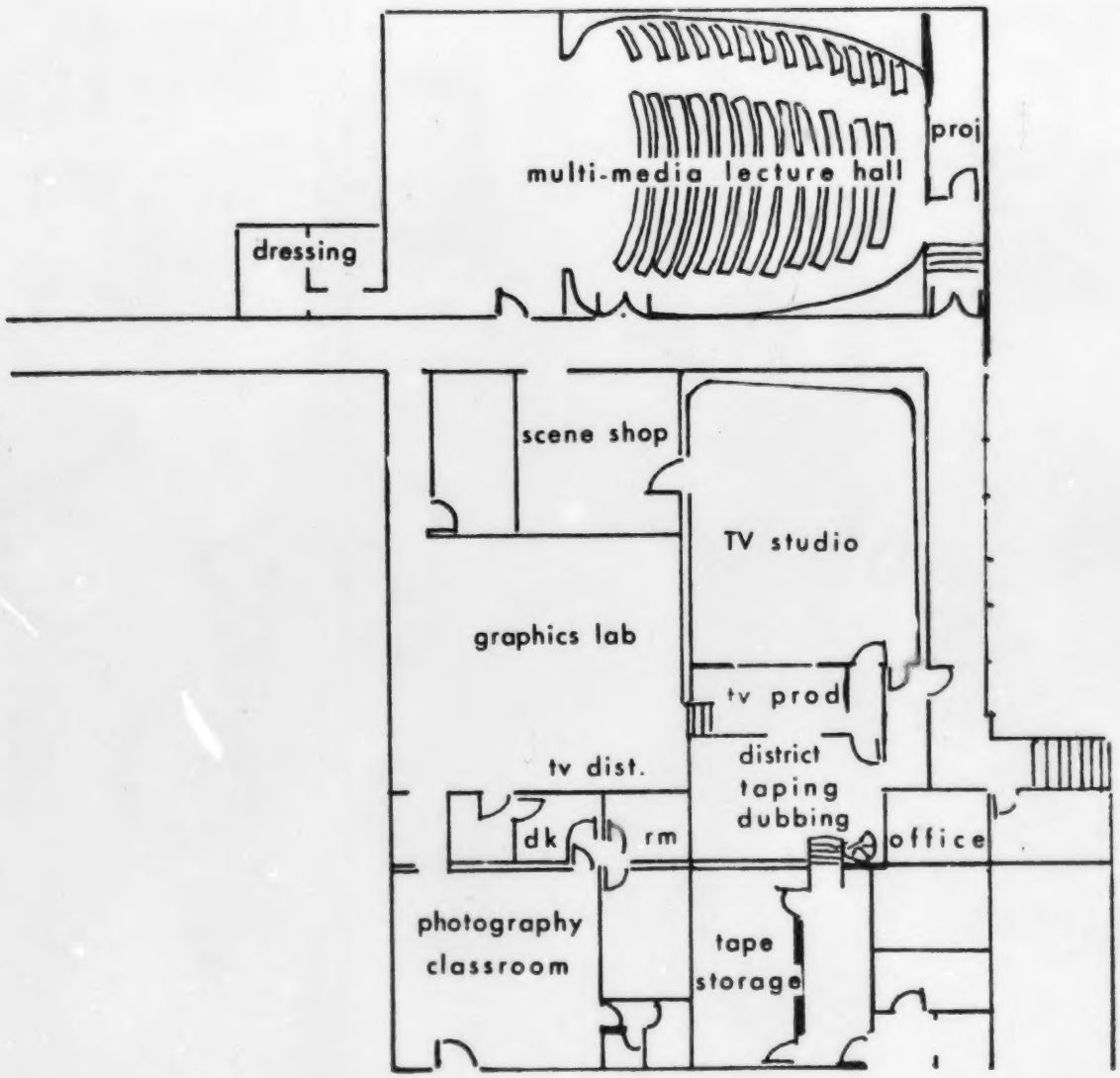
Highland High has a new principal, Dr. David Handley, who along with the rest of the staff and school, feels that this center is a distinguishing feature of the school. He is of the opinion that the former administrator of the school, the district personnel, and the school board are to be commended for their efforts and that the students of the school are fortunate to have this facility to aid them in the learning process.

HIGHLAND HIGH MEDIA CENTER

Main Floor



HIGHLAND HIGH MEDIA CENTER
Second Floor



"You'll find 'Teaching Methods That Never Fail' under fiction."